

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1(Currently amended). A purified recombinant thermostable enzyme, which is a variant of the enzyme ~~having an amino acid sequence of SEQ ID NO:1~~ obtainable by replacing one or more amino acids in SEQ ID NO:1 with other amino acids, deleting one or more amino acids in SEQ ID NO:1, or adding one or more amino acids to the N-terminus of SEQ ID NO:1; and which has the following physicochemical properties:

(1) Action

Forming non-reducing saccharides having a trehalose structure as an end unit and having a degree of glucose polymerization of at least 3 from reducing amylaceous saccharides having a degree of glucose polymerization of at least 3;

(2) ~~Optimum temperature~~

~~About 75°C when incubated in 20 mM acetate buffer (pH 5.5);~~

Molecular weight

About 69,000-79,000 daltons on sodium dodecyl sulfate polyacrylamide gel electrophoresis (SDS-PAGE);

~~(3) Optimum pH~~

~~About 5.0-5.5 when incubated at 60°C for 60 min;~~

~~(4) pH Stability~~

~~About 4.5-9.5 when incubated at 25°C for 16 hours;~~

~~(5)~~ (3) Thermostability

Substantially not inactivated even when incubated
in an aqueous solution (pH 7.0) at 85°C for 60
min.; and

(4) Isoelectric point (pI)

About 5.4-6.4 on isoelectrophoresis; and

~~(6)~~ (5) Amino acid sequence

Having an amino acid sequence of SEQ ID NO:1 in
which one or more amino acids are replaced with
other amino acids, deleted, or added to the N-
terminus of SEQ ID NO:1, and not having the amino
acid ~~sequences~~ sequence(s) of SEQ ID NO:3 and/or
SEQ ID NO:4.